

**Trends in Age Distribution and Support Ratios:
Can America Afford to Support Future Generations in their Retirement?**

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Will America be able to pay for the retirement of its Baby Boom generation and the younger generations that follow it? Will the people who remain in the labor force be able to produce enough goods and services to meet the needs and expectations of America's population in 2030 and beyond? Finding the right answers to such questions requires an understanding of the historical context, the causes, and the magnitudes of key demographic trends.

This paper uses four demographic tools to advance that understanding: population pyramids, senior support ratios, total support ratios, and economic support ratios. Each of these tools helps to dispel common misconceptions and to demonstrate that America's coming retirement challenge should be more manageable than it is often presumed to be.

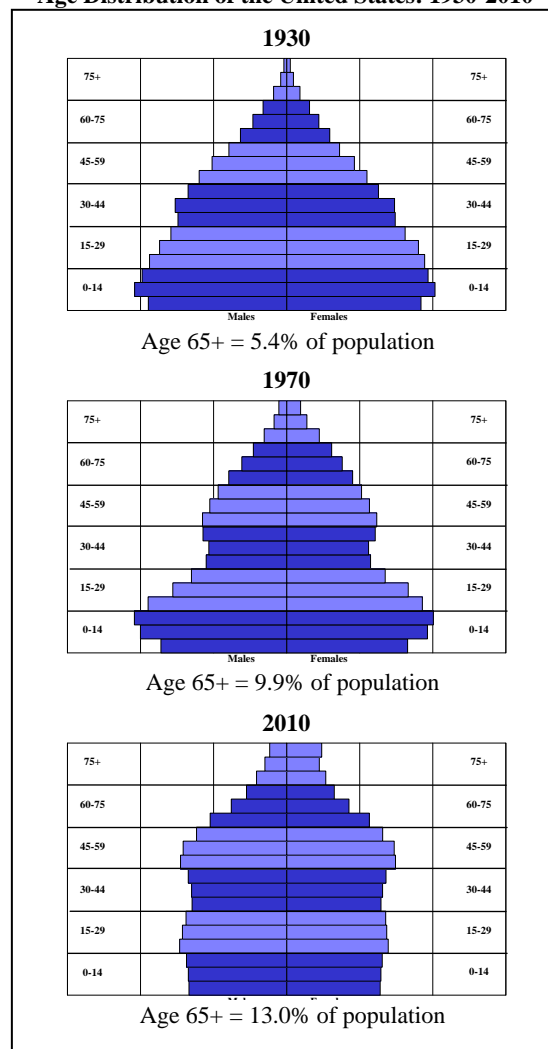
Implications of Population Pyramids

The population pyramids in Figure 1 show the distribution of America's population by age for selected years from 1930 to 2010.¹ The size of each bar represents the relative number of people in a 5-year age group. The youngest people are at the bottom of each pyramid and the oldest are at the top; males are shown on the left and females are on the right. Each bar moves upward with the passage of time—altered in size by mortality and net immigration—as new cohorts of young children appear at the bottom.

The top panel of Figure 1 illustrates the classic shape from which population pyramids receive their name. Almost every younger generation in the pyramid for 1930 was larger than the older generations above it. Mortality contributes to the tapering of every population pyramid, particularly at the older ages, but the shape of this pyramid primarily reflects a history of high immigration and high fertility in most decades prior to the Great Depression. The number of children had consistently exceeded the number of parents and the number of young adults had constantly increased through immigration in the decades prior to 1930. Thus, America's workers supported a large number of children and a small number of elderly people.

The pyramid for 1970 has a more irregular shape. The bars for ages 25 through 39 are particularly small because of low birth rates during the Great Depression and World War II. The bars for ages 5 through 24 are particularly large due to the post-War Baby Boom. The narrowing toward the bottom of this pyramid reflects an echo of the Great Depression as

Figure 1
Age Distribution of the United States: 1930-2010



¹ U.S Census Bureau, Censuses of Population for 1930, 1970, and 2010.

well as a growing preference for smaller families: the number of people in the peak childbearing ages was relatively low in the years immediately preceding 1970 because of low birthrates from 1930 through 1945.

By 2010, as illustrated in the bottom panel of Figure 1 on the previous page, the small generation born during the Great Depression and World War II was age 65 and over and the Baby Boom generation was poised to begin passing age 65. The bulge at the young adult years represents an echo of the Baby Boom. A substantial number of children had been born between 1975 and 1995 because a large number of Baby Boomers were having children. The Baby Boom generation did not bear quite enough children to replace itself, but immigration from other countries—along with mortality among Baby Boomers—enabled the echo generation (age 15 to 34 in 2010) to slightly exceed the size of the Baby Boom generation (age 45 to 64 in 2010). The narrowing at the bottom of this pyramid represents a second echo of the Great Depression. Other factors that contributed to a drop in birthrates include a deep national recession, the high cost of raising children, and a growing preference for small families or childlessness.²

The proportion of the population age 65 and over increased throughout the period covered by Figure 1, rising from 5.4% in 1930 to 9.9% in 1970 and 13.0% in 2010. Such increases are sometimes presumed to be caused primarily by increases in life expectancy, but the effects of changes in fertility and immigration are also evident from the preceding discussion.

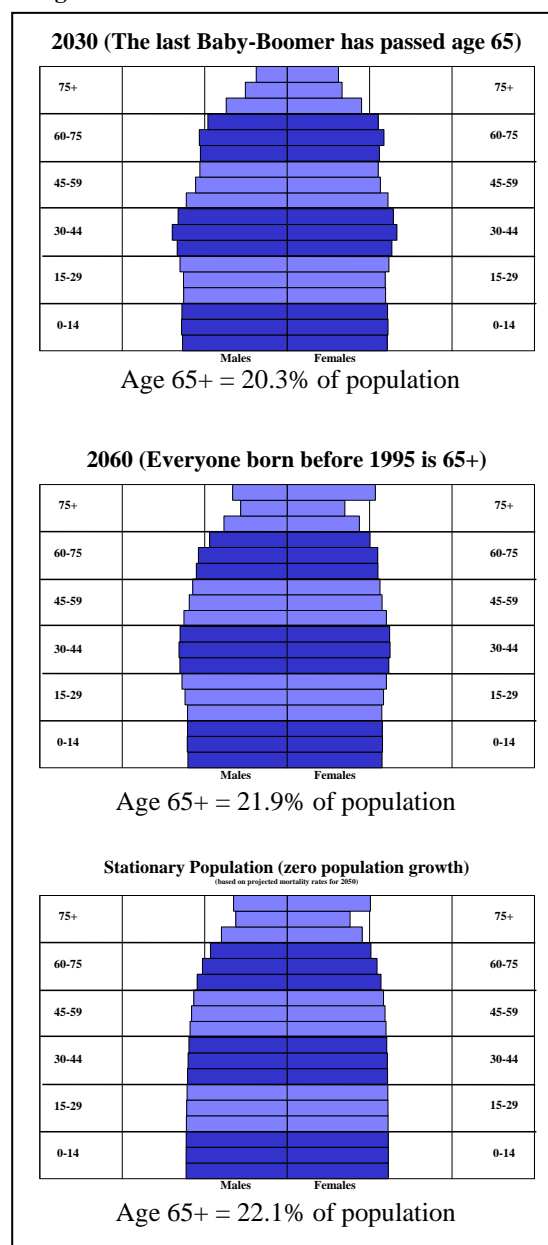
Figure 2 shows the age distributions that the Census Bureau has projected the United States to have in 2030 and 2060.³ The Census Bureau's projections are based on assumptions that America will continue to experience substantial immigration, improvements in life expectancy, and fertility rates slightly below replacement level. For purposes of comparison, Figure 2 also shows the hypothetical age distribution that any nation would have after a very long period of low mortality, replacement-level fertility, and no net immigration (i.e. zero-population growth).⁴

² Gallup Polls, "Americans' Preference for Smaller Families Edges Higher," www.gallup.com, poll 148355, June 30, 2011.

³ U.S. Census Bureau, Projected Population of the United States by Age and Sex: 2015 to 2060, released December, 2012.

⁴ The third pyramid in Figure 2 represents the "stationary population" from the projected U.S. life table for 2050 in Felicitie C. Bell and Michael L. Miller, *Life Tables for the United States Social Security Area: 1900-2100*, Actuarial Study No. 120, SSA Pub. No. 11-11536, U.S. Social Security Administration, August 2005.

Figure 2
Age Distribution of the United States: 2030-2060

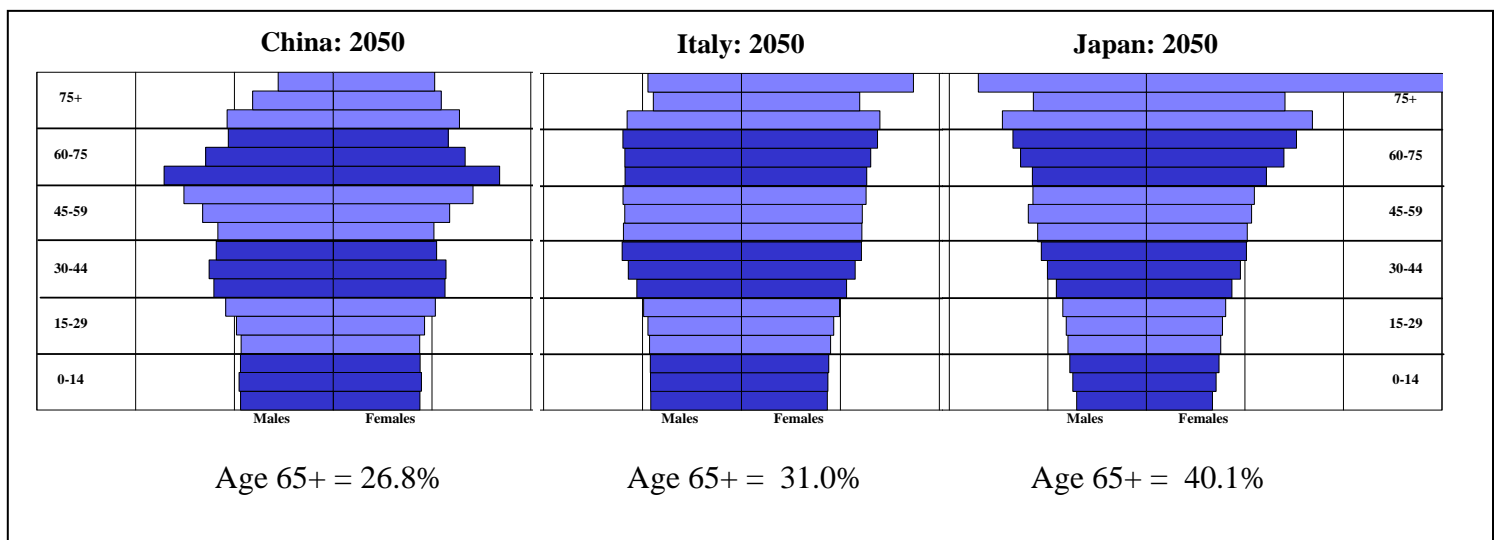


The years 2030 and 2060 have special significance for purposes of analyzing America's retirement challenge. The last Baby Boomer will turn 65 in 2030. By 2060, however, any surviving Baby Boomers will be between the ages of 95 and 115, and they will account for only a small portion of the topmost bar of the pyramid. Most Baby Boomers will have passed away by then and most of their children will be retired. Thus, America's age distribution in 2030 illustrates the challenge of supporting the Baby Boom generation while its age distribution in 2060 primarily illustrates the challenge of supporting post-Boomer generations.

One of the most important things to learn from Figure 2 is that America's retirement challenge is not simply a temporary phenomenon caused by the large number of people born in the Baby Boom. People age 65 and over are actually projected to represent a slightly higher percentage of the population in 2060 than in 2030 (21.9% vs. 20.3%). The fact is that any generation—large or small—can expect to have a large number of working-age people to support it in retirement if it has had a large number of children and grandchildren and if the nation has been receiving a large number of young immigrants. Any generation that does not have many children and grandchildren—whether it is a large generation or a small generation—can expect to have fewer working-age people to support it in retirement. The size of the older generation is irrelevant. What matters are the subsequent rates of fertility and immigration.

America is actually doing relatively well in that regard. Even though fertility has been below replacement level, particularly for America's native-born population, the nation has compensated for its lack of children through foreign immigration. The net result is a projected age distribution that is very close to the pattern that would have resulted from a long period of stable fertility at the zero-population-growth level, as represented by the bottom pyramid in Figure 2. The percentage of the population age 65 and over in that pyramid (22.1%) is actually slightly higher than the projected percentages for 2030 and 2060 (20.3 and 21.9). Thus, if near-replacement fertility is to be regarded as normal, then the percentages of people above age 65 that have been projected for 2030 and 2060 must be regarded as normal.

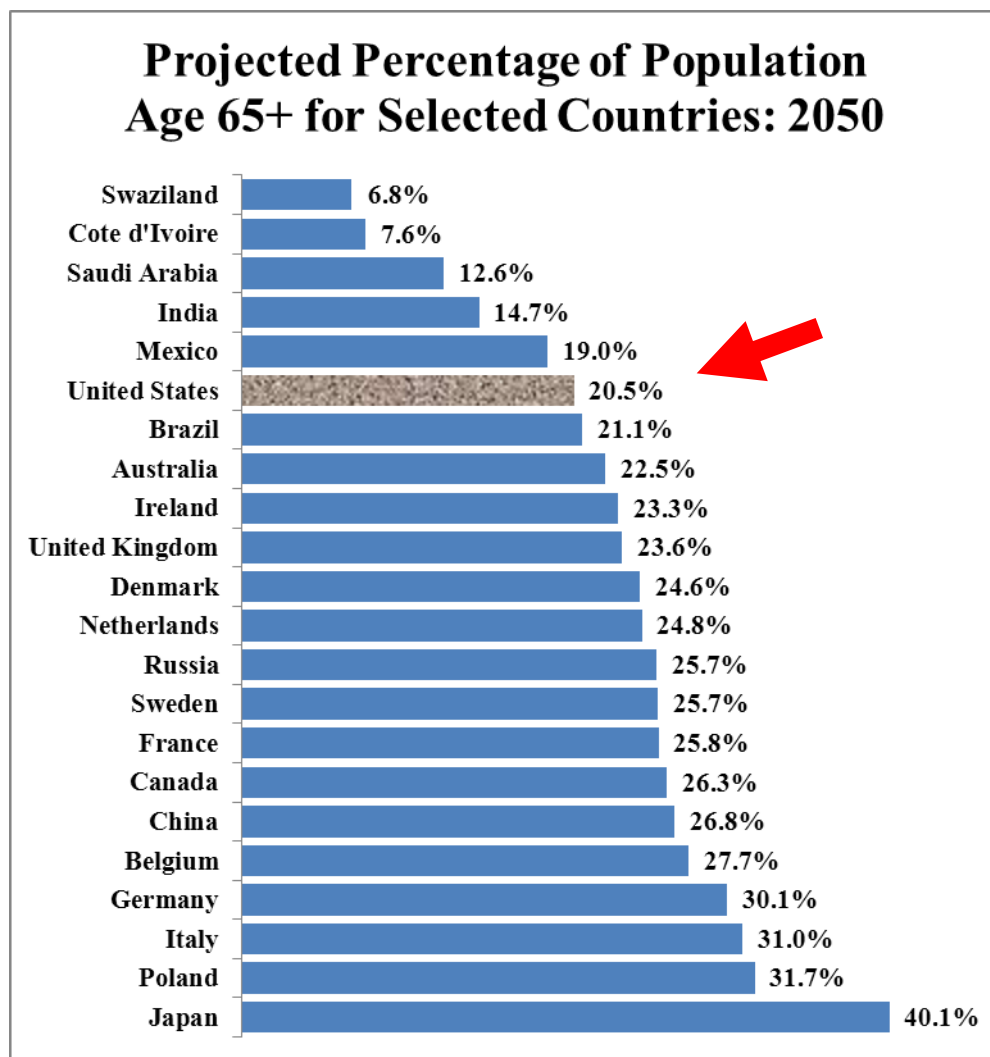
Figure 3
Age Distributions for Selected Countries: 2050



Most developed nations will have much more serious retirement challenges than the U.S. even though many of them did not have large Baby Booms. Figure 3 shows projected age distributions in 2050 for three countries that did not have Baby Booms after World War II.⁵ The bulge in China's age distribution will still be passing age 65 in 2050, but Italy, Japan, and many other nations will already have very large percentages of their population beyond age 65.

Figure 4 shows the projected percentage of population age 65 and over in 2050 for several nations. Among the world's wealthy developed nations, the U.S. is actually projected to have the lowest percentage of its population in this age group. Nations that have had larger declines in fertility than the U.S. can expect to have more difficulty supporting their future retirees.

Figure 4



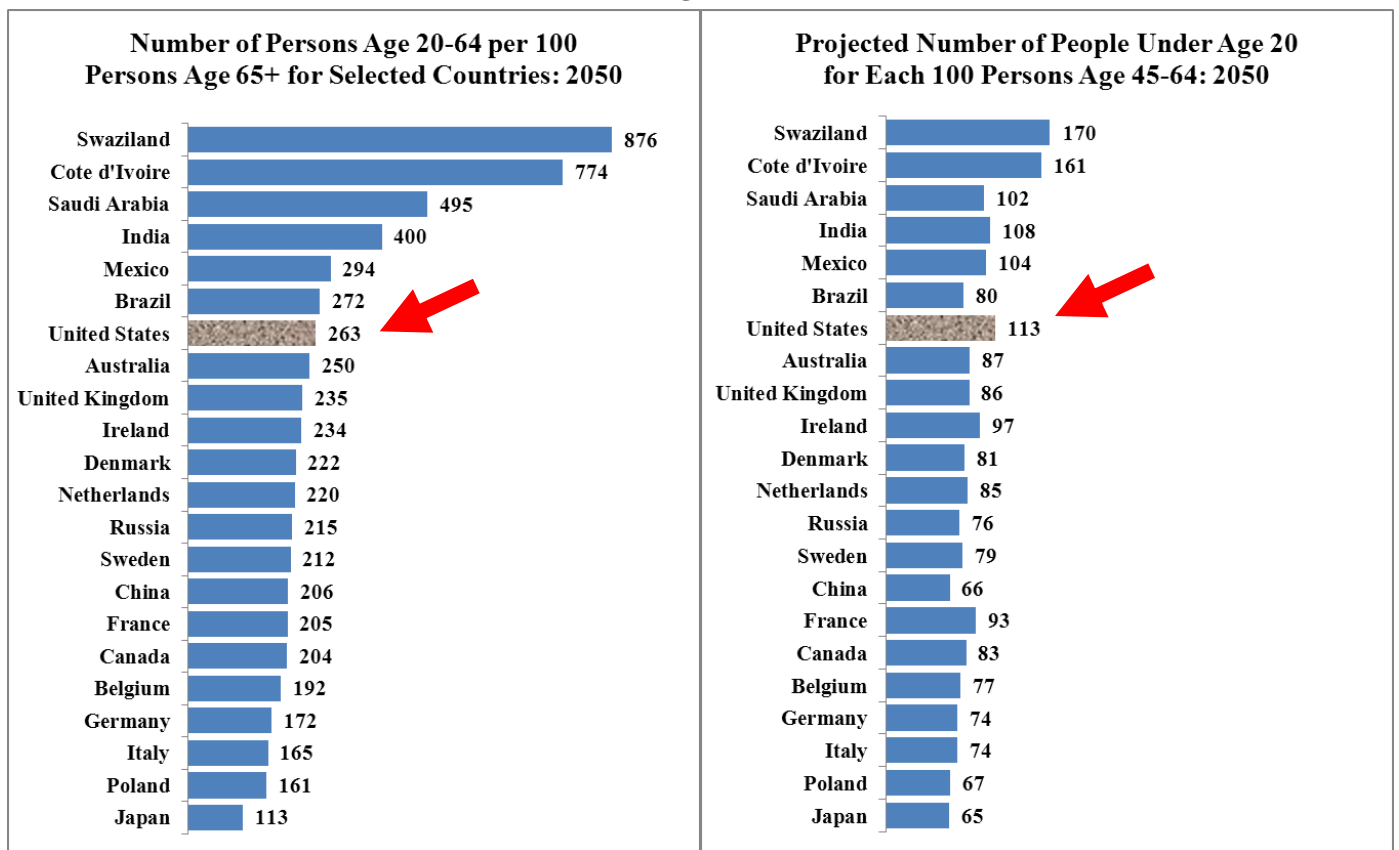
⁵ U.S. Census Bureau, International Database, www.census.gov/population/international/index.html

Implications of Senior Support Ratios

Additional insights can be gained by examining the senior support ratio, i.e. the number of people in the prime labor force age group (age 20-64) for each 100 persons age 65 and over.⁶ This statistic is a somewhat better indicator of the demographic challenge of supporting retirees because it reflects changes in the working-age population as well as changes in the senior population.

The left panel of Figure 5 shows the projected senior support ratio in 2050 for several countries. The United States is projected to have a more favorable ratio than any other wealthy developed nation. Relative to the United States, several nations such as Russia and China are projected to have only about 80 percent as many people of prime labor force age for each person of retirement age. Japan is projected to have only 43 percent as many.

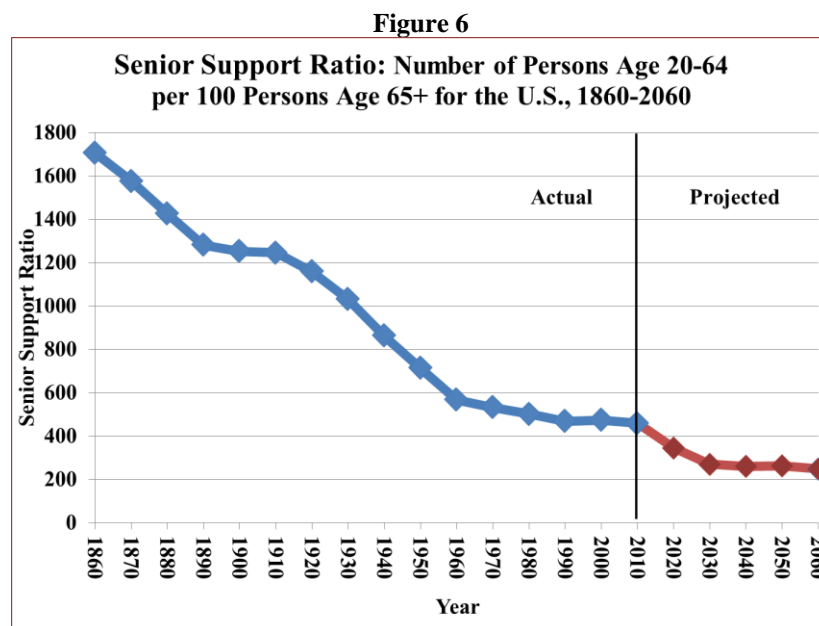
Figure 5



⁶ A “support ratio” is the ratio of workers or persons of working age to persons assumed to be dependents. A “dependency ratio” is the mathematical inverse of a support ratio, i.e. it is the ratio of presumed dependents to workers or potential workers. These are alternative ways of expressing the same information. Young demographers typically use the terms “aged support ratio” or “elderly support ratio” or “old-age support ratio,” but this paper uses the equivalent term “senior support ratio.”

International projections are not available from the U.S. Census Bureau for years beyond 2050, but the right hand panel of Figure 5 provides a good indicator of what each nation is likely to experience in subsequent decades. People between the ages of 45 and 64 will turn 65 between 2050 and 2070 while people under age 20 pass into the prime labor force age group. For most nations, the projected number of people under age 20 is lower than the number age 45-64 even though the 45-64 age group has been reduced somewhat by mortality. The ratio for China is very close to the ratio for Japan, and even some developing nations have less favorable ratios than the U.S. Thus, the challenge of supporting retirees can be expected to increase more slowly in the U.S. after 2050 than in most other nations if fertility rates follow projected patterns.

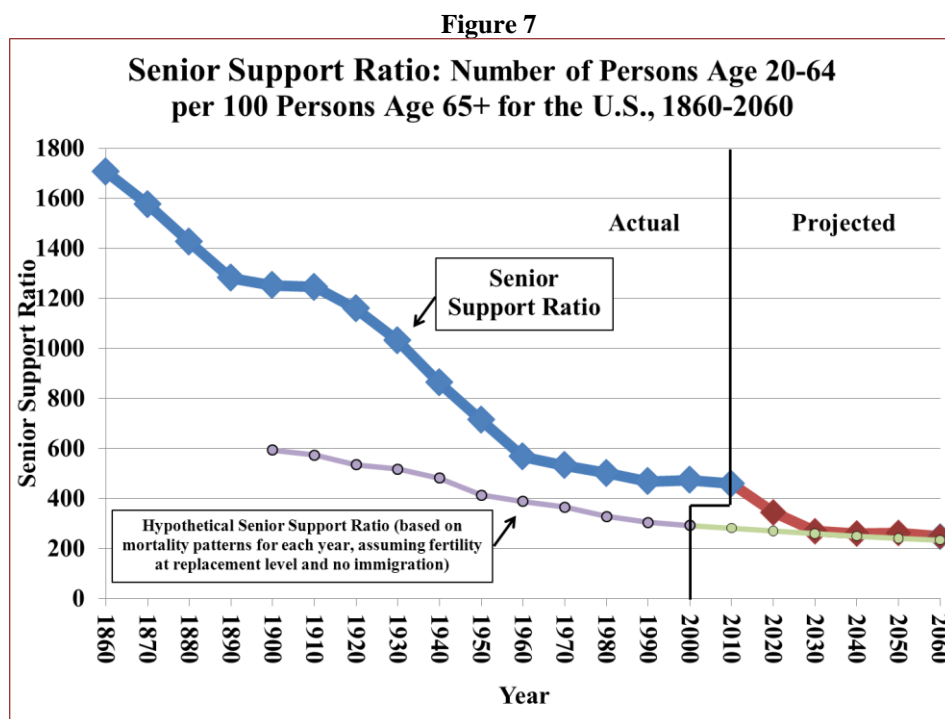
Figure 6 provides historical perspective by showing the senior support ratio for the U.S. from 1860 through 2060. In addition to showing that America's senior support ratio is projected to decline, this chart demonstrates that the expected decline represents the culmination of a very long-standing trend.



- The U.S. had over 17 working-age people for each person over 65 in 1860. That reflected a large number of first-generation and second-generation immigrants under age 65 and a much smaller number of Americans who had been born before 1795.
- The ratio decreased rapidly between 1860 and 1890. More first-generation and second-generation Americans were passing age 65 while the number of new working-age immigrants was somewhat lower in most decades. Nevertheless, America was still a very young country with many children and immigrants and relatively few people over age 65.
- The ratio stabilized from about 1890 to about 1910. Some of the people who would have been turning 65 at this time had been killed during the Civil War. America's working-age population also increased very rapidly in the first decade of the century because of a very high level of immigration.

- Another pause occurred between 1990 and 2010. Until 2011, the generation turning 65 was the small generation that had been born during the Great Depression and World War II. America also increased its working-age population during this period by receiving a significant number of young immigrants from abroad.
- The ratio is projected to resume its rapid rate of decline between 2010 and 2030 as Baby Boomers pass age 65.
- The trend is not projected to reverse even after the last Baby Boomers pass age 65 in 2030. In fact, the ratio is projected to keep going down by a small amount.

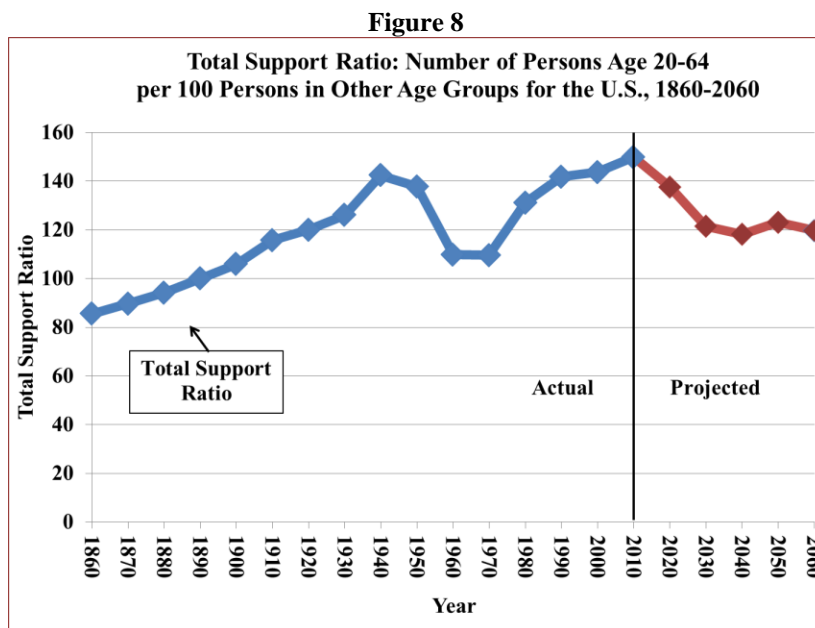
Decreases in the senior support ratio are sometimes attributed to increases in life expectancy, but changes in fertility and immigration rates can be even more important. Figure 7 is identical to Figure 6 except that it includes an additional graph to show the impact of improved life expectancy on the senior support ratio. The thin line in Figure 6 represents the hypothetical support ratios implied by the age-specific mortality rates observed or projected for each year under assumptions of replacement-level fertility and no net immigration.⁷ Thus, the slope of the thin line illustrates the impact of improved life expectancy while the gap between the two lines primarily reflects the combined impact of historical changes in fertility and immigration. The downward slope of the thin line indicates that improvements in life expectancy have had a significant impact upon the senior support ratio, but the large change in the gap between the two lines indicates that changes in rates of fertility and immigration have had an even greater effect.



⁷ The hypothetical support ratios are based on life table stationary populations published in Felicitie C. Bell and Michael L. Miller, *Life Tables for the United States Social Security Area: 1900-2100*, Actuarial Study No. 120, SSA Pub. No. 11-11536, U.S. Social Security Administration, August 2005.

Implications of Total Support Ratios

Unlike the “senior support ratio” discussed above, the “total support ratio” shown in Figure 8 reflects the fact that the working-age population needs to support children as well as retirees. This ratio is still a fairly crude measure of economic demands upon workers,⁸ but it provides additional insights into the nature of America’s retirement challenge.



- Unlike the senior support ratio, which decreased in every decade, the total support ratio increased from 1860 through 1940. Immigration increased America’s working-age population during most of this period. Declining fertility also led to a reduction in the percentage of people under age 20, particularly during the Great Depression.
- The total support ratio decreased sharply during the childhood of the Baby Boom generation, but it then increased sharply as Baby Boomers passed age 20.
- The total support ratio reached an all-time peak in 2010. This reflected the presence of the Baby Boom generation in the primary labor force age group along with most children of Baby Boomers and a substantial number of recent immigrants. At the same time, the number of young children was low because of low birth levels in recent years and the number of people over age 65 was low because of low birthrates during the Great Depression and World War II.
- The ratio is projected to fall sharply between 2010 and 2030 as the Baby Boom generation passes age 65. Although the ratio is expected to keep falling until 2040, it is projected to remain above the levels experienced prior to 1920 and above the levels reached in 1960 and 1970.

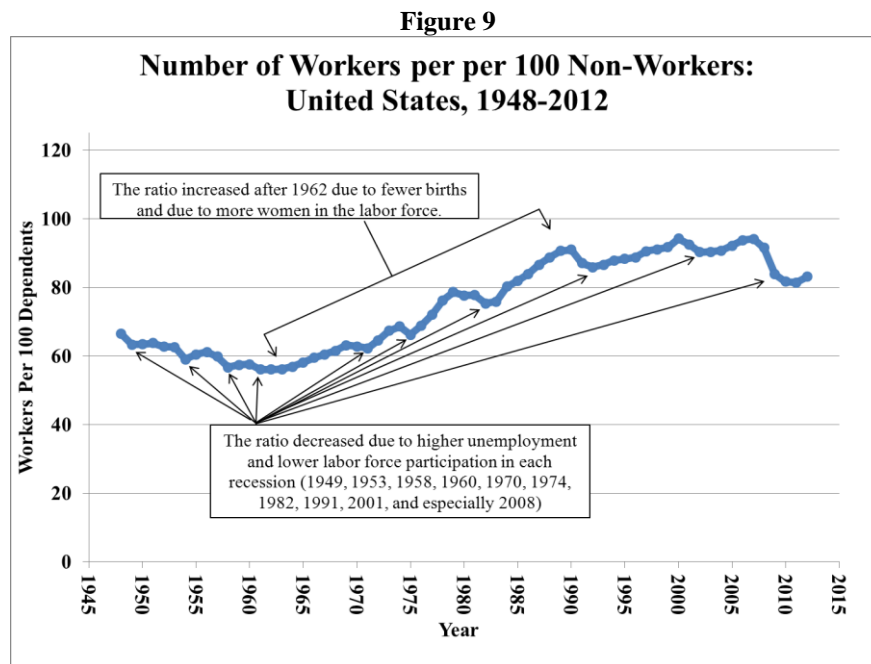
⁸ The total support ratio does not reflect the fact that support requirements vary with age. Children require more education, for example, while the older population tends to require more health care. Age thresholds are also problematic. Educational expenses increase for students attending college, but people over age 20 are typically classified as part of the working-age population rather than as dependents in demographic support ratios. The normal age for labor force entry and exit has also changed over time and employment rates vary by age and sex.

Thus, although the total support ratio will drop from the unprecedented favorable levels of 2000 and 2010, it is projected to drop only to a “normal” level. The projected ratio for 2060 (120 per 100) is very close to the average for the 150-year period from 1860 to 2010 (119 per 100) and it is more favorable than the level associated with low mortality and zero-population growth (115 per 100).⁹

Implications of Economic Support Ratios

Although the purely demographic support ratios discussed above provide several useful insights, they omit a critically important factor. Economic conditions and cultural changes can influence whether people of any age are workers or dependents. Thus, from an economic demographer’s perspective, it is essential to compare the number of non-workers—regardless of age—to the number of people with jobs. That historical comparison provides some very useful insights that are not provided by purely demographic support ratios.

Figure 9 shows the economic support ratio for the United States from 1948 through 2012.¹⁰ The decrease in the ratio between 1948 and 1962 reflects the large number of children born during the Baby Boom. The increase after 1962 was caused primarily by a smaller number of children as the Baby Boom ended, by later marriages, and by large increases in employment for married women. As was the case with the total support ratio, the economic support ratio has recently been at an especially favorable level. It reached an all-time peak in 2000 and nearly equaled that peak in 2007.



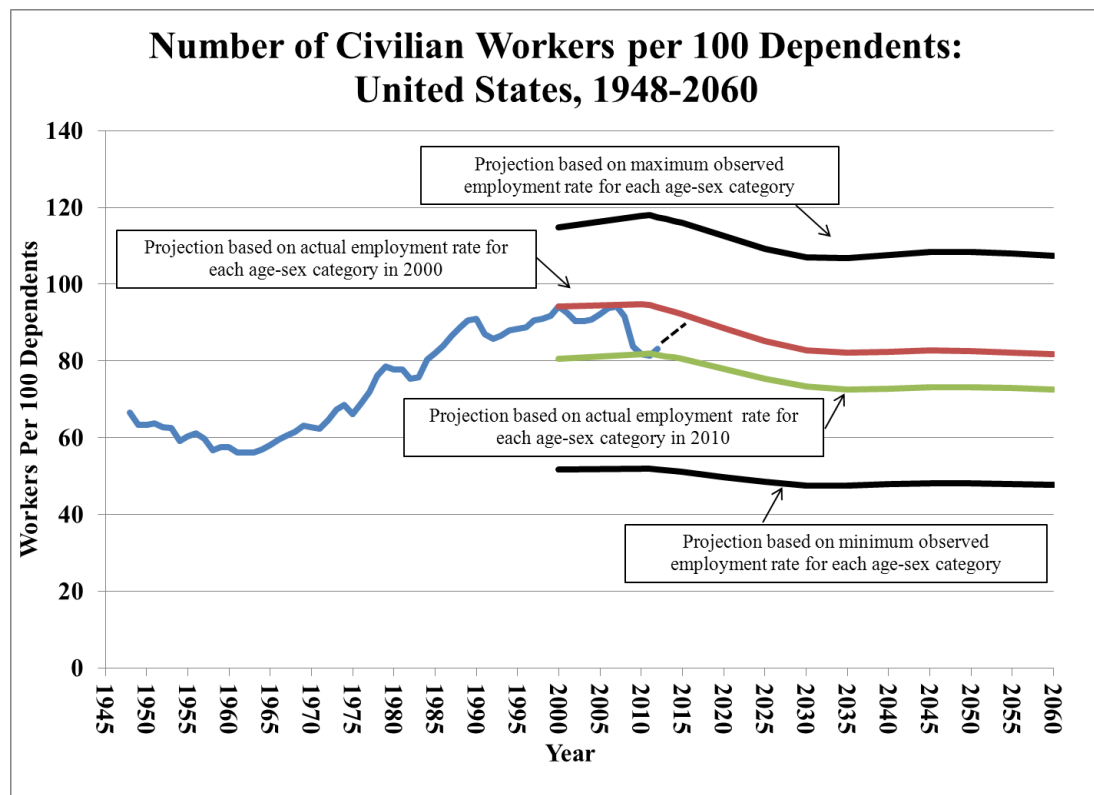
⁹ Based on a projected life table for the U.S. in 2050. See Bell *et. al., op. cit.*

¹⁰ The economic support ratio is defined here as total civilian employment per 100 persons in the remainder of the population. It is based on population totals from the U.S. Census Bureau and employment estimates derived from the Current Population Survey by the U.S. Bureau of Labor Statistics.

Unlike demographic support ratios, which tend to change direction at a glacial pace, the graph in Figure 9 changes direction temporarily every few years. These irregularities are very meaningful. Each temporary decrease reflects higher rates of unemployment and lower rates of labor force participation during a national recession. The largest such decrease took place between 2007 and 2010. The “Great Recession” during this period simultaneously made it harder for workers of all ages to find or keep jobs and made it more difficult for older workers to afford retirement. The combined effect of these two factors was that employment rates dropped precipitously for the youngest workers while dropping less for middle-age workers and increasing somewhat for people over age 65.¹¹

The green line in Figure 10 extends the graph to the year 2060 based on the Census Bureau’s projections of future population and assuming no change in employment rates by age and sex from the 2010 level. As would be expected from previous discussion of demographic support ratios, this projection of the economic support ratio decreases almost every year due to growth in the percentage of people age 65 and over. However, because it accounts for non-workers in every age group, the economic support ratio decreases much less in percentage terms between 2010 and 2060 (-11.4%) than the total support ratio (-20.1%) or the senior support ratio (-45.9%). Moreover, despite this decrease, the projection remains above the level that the U.S. experienced before 1978.

Figure 10



¹¹ U.S. Bureau of Labor Statistics, Current Population Survey, Employment-Population Ratios (annual averages of quarterly statistics from 1948 through 2012). See charts and tables in the appendix to this paper for further detail.

Figure 11

**Population, Civilian Workers, and Dependents
in the United States: 2007-2060**

Category	2007 (Actual)	2010 (Actual)	2030 (Projected assuming no change in employment rates by age and sex)	2030 (Projected assuming return to employment pattern of 2000)	2060 (Projected assuming no further change in employment rates)
Population	301.2 M	309.3 M	358.5 M	358.5 M	420.3 M
Civilian Workers	146.0 M	139.2 M	151.6 M	162.4 M	188.9 M
Dependents	155.2 M	170.1 M	206.9 M	196.1 M	231.3 M
Percent Employed	48.5%	45.0%	42.3%	45.3%	45.0%
Support Ratio (workers per 100 dependents)	94	82	73	83	82
Category	2007 (Actual)	Change During Great Recession 2007-2010	Impact of Projected Demographic Change, 2010-2030	Direct Impact of Economic Recovery, 2010-2030	Impact of Projected Demographic Change, 2030-2060
Population	301.2 M	+8.1 M	+49.1 M	+0	+61.8 M
Civilian Workers	146.0 M	- 6.8 M	+12.4 M	+10.8 M	+26.6 M
Dependents	155.2 M	+14.9 M	+36.8 M	- 10.8 M	+35.2 M

Source: Michigan Department of Technology, Management, and Budget / CSSTP.

Based on projections of the national population from the U.S. Census Bureau and employment rates derived from data produced by the U.S. Bureau of Labor Statistics.

One of the most interesting observations that can be made about the green line in Figure 10 is that the impact of projected demographic trends upon the economic support ratio is not unprecedented in its size. The projected decline in the support ratio for the fifty-year period from 2010 to 2060 (-9.3 points) is actually smaller than the decrease that took place from 2007 to 2010 during just three years of recession (-12.4 points). This highlights the seriousness of the latest recession as well as the manageable magnitude of projected demographic changes.

It is also important to note that the projection illustrated by the green line in Figure 10 assumes continuation of recession-level employment rates for the next fifty years. It may be more reasonable to assume eventual return to the pre-recession employment patterns of 2000 that are illustrated by the brown line in Figure 10 and the statistics in Figure 11. This leads to another important finding: the resulting support ratios for 2030 and 2060 (83 and 82 workers per 100 non-workers respectively) are essentially equal to the ratio for 2010 (82 workers per 100 non-workers). In other words, simply

returning to pre-recession employment levels for each age/sex category can offset the projected effect of aging upon the economic support ratio.¹²

The black lines in Figure 10 indicate that historical changes in labor force participation and employment have had much more influence upon the economic support ratio than changes in age distribution are projected to have:

- The upper black line illustrates the effect of employment rates remaining constant at the highest level experienced by each age/sex category between 1948 and 2012. Thus, if males returned to their peak employment rates of the late 1940's and early 1950's while females returned to their peak rates from before the latest recession, then the economic support ratio would rise to a much higher level than the U.S. has achieved at any time since the employment data series began in 1948.
- The lower black line illustrates the effect of employment rates remaining constant at the lowest level experienced by each age/sex category between 1948 and 2012. In other words, the support ratio would fall back to roughly the level that was reached during the Baby Boom in 1962 if employment of adult women dropped to the level of the late 1940's and 1950's while other groups also returned to or remained at recent depressed levels.

The charts and statistics discussed above suggest that America should be able to produce enough goods and services to meet the needs and expectations of its population in 2030 and 2060. Merely restoring employment rates for each age/sex category to the level achieved in 2000 would result in the same ratio of workers to non-workers in 2060 as the U.S. experienced in 2010. Such a development would not be burdensome, since it involves more people who want to work being able to work while more people who want to be retired are able to retire. Moreover, if productivity increases in coming decades as it has in the past, then the workforce of 2030 or 2060 should be able to provide more effectively for dependents of all ages than the recession-encumbered workforce of 2010. This suggests that the U.S. economy can produce sufficient resources to support its Social Security and pension systems for the foreseeable future.¹³

¹² Due to changes in age distribution, the increase in the support ratio that would result from returning to pre-recession employment rates between 2010 and 2060 (+9.1 points) is smaller than the decrease in the support ratio that took place between 2007 and 2010 (-12.4 points). Some of the age groups that were hit hardest by the recession are projected to grow relatively slowly. The population over age 65, which is projected to grow very rapidly, had a *lower* employment rate before the recession than it had in 2010. Thus, returning to pre-recession employment rates will decrease employment and increase dependency for this age group.

¹³ Of course, the assumptions underlying any projection are subject to uncertainty. Factors that might make it easier to support future retirees include: longer working life as health and life expectancy increase; higher employment rates in response to a stronger job market and potential labor shortages; smaller improvements in mortality than projected; higher levels of immigration or fertility than projected; and technological advances that increase productivity.

Factors that might make it more challenging to support future retirees include: lower levels of fertility or immigration than projected; larger improvements in life expectancy than projected; later entry into the workforce or earlier retirement from the workforce; and major economic disruptions.

The analysis presented in this paper demonstrates that the resources to support future generations of retirees should be *present* in the U.S. economy. However, political and practical issues may affect the amount of resources actually *used* for that purpose. Other nations with lower fertility rates can expect to have fewer resources relative to the size of their retirement-age populations.

Summary

The statistics presented in this paper address several common misconceptions related to the aging of America's population and the nation's ability to support future generations in their retirement.. These misconceptions and their factual counterparts are summarized in Figure 12.

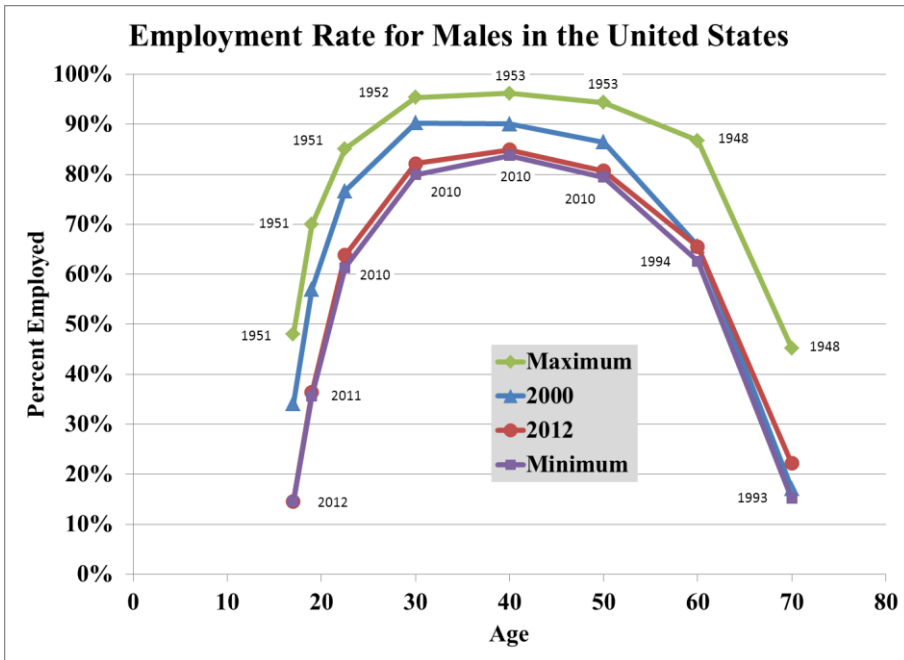
Figure 12

Common Misconceptions	Factual Counterparts
<p>1) By the time the last Baby Boomer turns 65 in 2030, the percentage of people over age 65 in the U.S. will be abnormally high.</p> <p>2) The percentage of U.S. residents over age 65 will start going down after the last Baby Boomer turns 65 in 2030.</p> <p>3) America's coming retirement challenge is caused by the large number of people born during the Baby Boom.</p> <p>4) Because the U.S. had one of the world's largest baby booms after World War II, it can be expected to have one of the world's largest imbalances between working-age people and people over age 65.</p>	<p>1) The percentage of the U.S. population over age 65 in 2030 is projected to be slightly <i>lower</i> than the level associated with "zero population growth." If fertility rates near the replacement level are regarded as normal, then having about 20% of the population over age 65 must be regarded as normal. (See pp. 2-3.)</p> <p>2) Having a high percentage of the population age 65 and over is not a temporary challenge associated with the Baby Boom. Rather, it is an ongoing challenge caused by having fertility rates near or below replacement level. The percentage of U.S. residents over age 65 is projected to keep increasing until at least 2060, even though most of the Baby Boom generation will have passed away by then. (See p. 3)</p> <p>3) Any generation—large or small— will have a large number of working-age people to support it in retirement if it has had a large number of children and grandchildren or if the nation has received a large number of younger immigrants.</p> <p style="padding-left: 40px;">The size of the older generation is irrelevant—what matters are the subsequent rates of fertility and immigration. (See p. 3)</p> <p>4) The projected percentage of residents over age 65 is much lower for the U.S. than for countries that have had larger decreases in fertility rates, regardless of whether or not they had baby booms after World War II. (See pp. 3-6)</p>

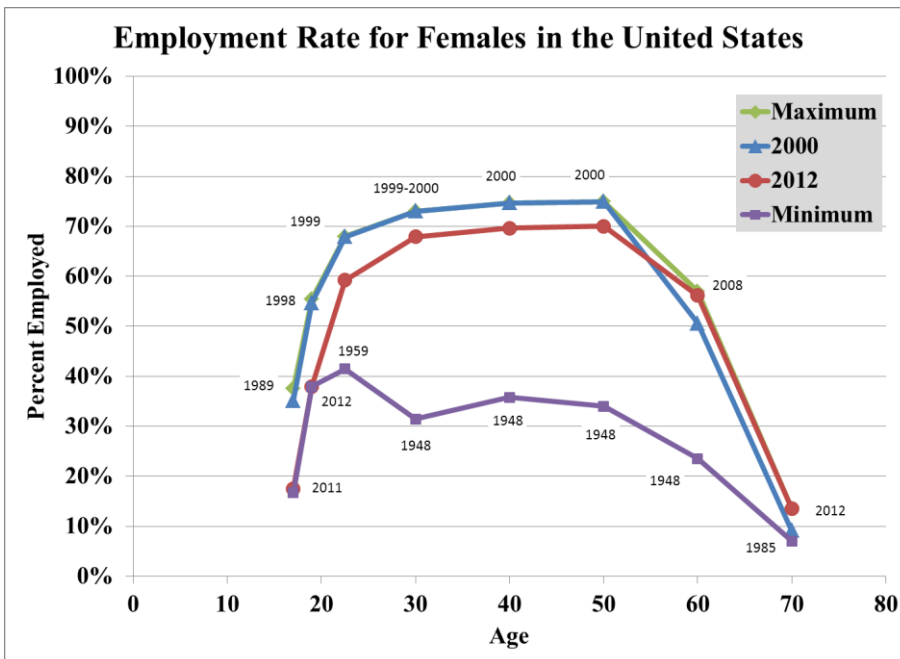
Common Misconceptions	Factual Counterparts
<p>5) The percentage of elderly people in the U.S. has increased primarily because people are living longer.</p> <p>6) The U.S. will have fewer workers per non-worker than ever before once the Baby Boom generation retires.</p> <p>7) Due to aging of its population, the U.S. is facing an unprecedented decrease in its ratio of workers to non-workers.</p> <p>8) Because of a declining ratio of workers to non-workers, the U.S. should expect to have a hard time meeting the needs and expectations of its population once the Baby Boom generation and the following generations retire.</p>	<p>5) Although there have been significant improvements in life expectancy, changes in fertility rates have had even more effect upon the percentage of people age 65 and over. (See p.7)</p> <p>6) The number of workers per non-worker was actually lower during the Baby Boom and during the high-fertility period prior to 1930. (See p. 10, p. 8)</p> <p>7) The decrease projected for the 50-year period from 2010 to 2060 is smaller than the decrease that took place during three years of recession from 2007 to 2010. (See pp. 10-11)</p> <p>8) If employment rates for each age-sex category return to pre-recession levels, then the U.S. will have essentially the same ratio of workers to non-workers in 2030 and 2060 as it had in 2010. Moreover, normal improvements in productivity should enable the future U.S. workforce to provide for its dependents more effectively than the recession-encumbered workforce of 2010. (See pp. 11-12)</p>

Appendix

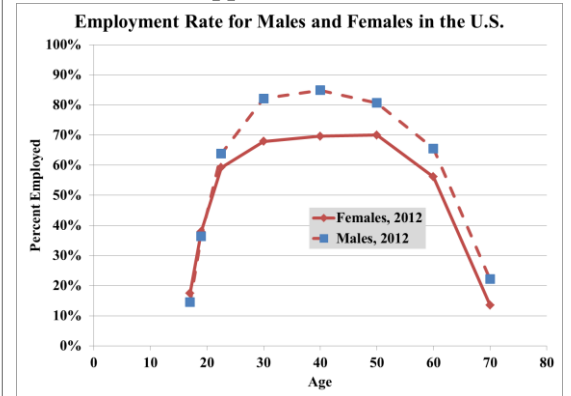
Appendix Chart 1



Appendix Chart 2



Appendix Chart 3



Notes: The employment rates in these charts are expressed as a percentage of the civilian non-institutional population.

The maximum and minimum employment rates in these charts are the highest and lowest annual rates by age and sex between 1948 and 2012.

Source: U.S. Bureau of Labor Statistics, Labor Force Statistics from the Current Population Survey, 1948-2012 (online resource at www.bls.gov).

Appendix Table 1
Employment Rates by Age and Sex
for the United States: 2000-2012

Age and Sex	Percent of Total Population Employed in Civilian Economy		
	2000	2010	2012
Males			
16-17	33.6%	14.7%	14.3%
18-19	54.1%	35.0%	35.3%
20-24	71.4%	57.8%	60.3%
25-29	84.6%	73.5%	75.9%
30-34	87.1%	78.1%	80.0%
35-39	87.4%	81.0%	81.7%
40-44	86.6%	80.3%	81.9%
45-49	86.6%	79.0%	80.5%
50-54	83.3%	76.6%	77.6%
55-59	74.3%	71.5%	72.2%
60-64	52.9%	54.6%	56.3%
65-69	29.1%	33.2%	34.3%
70-74	17.1%	20.6%	22.3%
75+	7.4%	9.4%	10.4%
Females			
16-17	35.1%	16.8%	17.5%
18-19	53.9%	38.2%	37.8%
20-24	66.9%	58.9%	58.7%
25-29	72.9%	67.6%	67.2%
30-34	72.2%	67.2%	67.5%
35-39	72.8%	68.1%	67.9%
40-44	76.0%	70.0%	70.7%
45-49	76.8%	71.3%	70.7%
50-54	72.2%	69.5%	68.9%
55-59	59.6%	64.0%	63.4%
60-64	39.0%	47.3%	47.4%
65-69	18.9%	25.0%	25.6%
70-74	9.6%	13.6%	14.3%
75+	3.1%	4.7%	4.5%

Source: U.S. Bureau of Labor Statistics, Labor Force Statistics from the Current Population Survey, 1948-2012 (online resource at www.bls.gov) .

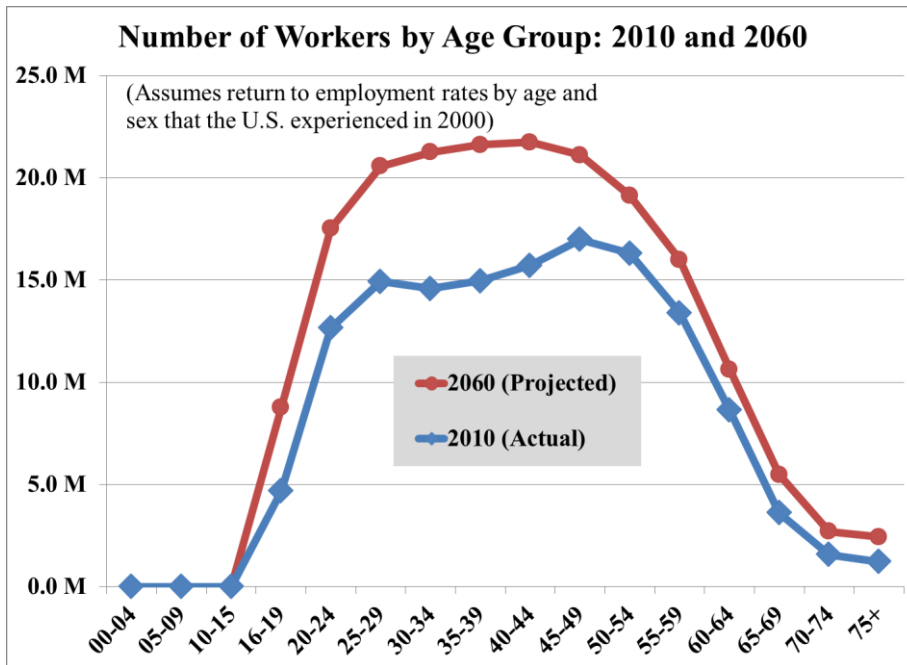
U.S. Census Bureau, Monthly Postcensal Estimates of the Civilian Noninstitutionalized Population, by single year of age, sex, race, and Hispanic origin; Postcensal Estimates of the Total Population by age and sex.

Notes: Employment rates are computed as an annual average of quarterly data for 1948 through 2012.

The employment rate is the average percentage of people in the indicated age range for whom a job was reported. The remainder of the population is unemployed or outside the labor force.

The figures in this table indicate the percentage of the total population that is employed in the civilian economy, i.e. they reflect adjustment of published employment rates to be applicable to the total population rather than the civilian non-institutional population. Thus, these employment rates are somewhat lower than the rates published by the Bureau of Labor Statistics.

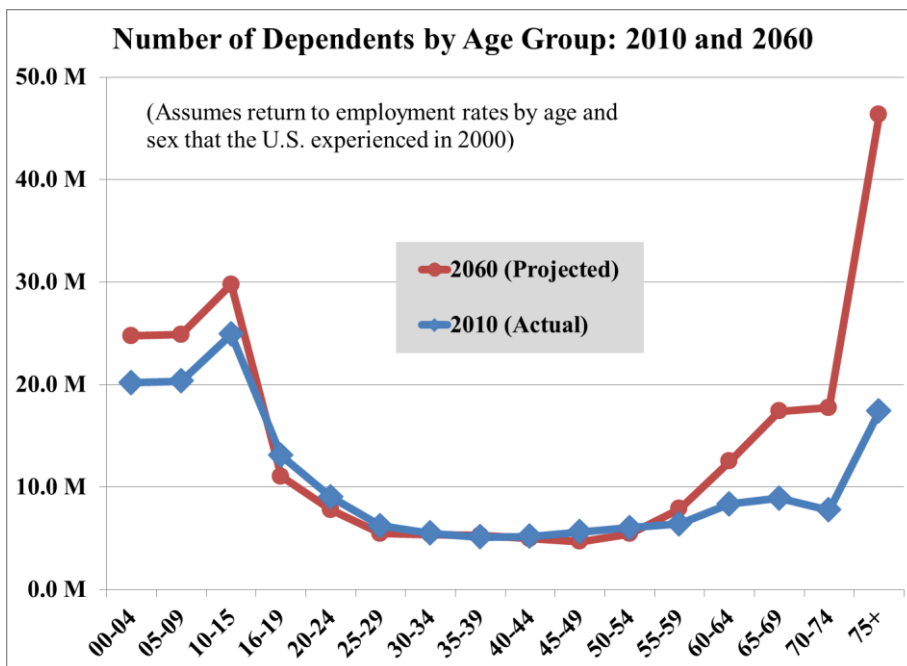
Appendix Chart 4



Notes: Estimates and projections of civilian workers were developed by applying employment rates by age and sex for 2010 and 2000 respectively to the Census Bureau's post-censal estimates and projections of total population by age and sex.

The employment rates used for this purpose reflected adjustments to make them applicable to the total population rather than the civilian non-institutional population.

Appendix Chart 5



Source: U.S. Bureau of Labor Statistics, Labor Force Statistics from the Current Population Survey, 1948-2012 (online resource at www.bls.gov) .

U.S. Census Bureau, projections of total population by age and sex, postcensal estimates of total population by age and sex, and estimates of civilian non-institutional population by age and sex (released in 2012)

Appendix Table 2

Civilian Workers and Dependents in the United States by Age and Sex: 2010-2060

Civilian Workers						Dependents					
Age and Sex	Actual Number of Workers in 2010	Impact of Demographic Change, ¹ 2010-2030	Impact of Economic Recovery, ² 2010-2030	Impact of Demographic Change, ³ 2030-2060	Projected Number of Workers in 2060 ⁴	Age and Sex	Actual Number of Dependents in 2010	Impact of Demographic Change, ¹ 2010-2030	Impact of Economic Recovery, ² 2010-2030	Impact of Demographic Change, ³ 2030-2060	Projected Number of Dependents in 2060 ⁴
MALES						MALES					
00-15	0	+0	+0	+0	0	00-15	33,443,787	+3,130,426	+0	+4,037,667	40,611,880
16-17	657,028	+9,196	+857,132	+180,184	1,703,541	16-17	3,810,196	+53,331	- 857,132	+355,600	3,361,994
18-19	1,623,146	- 67,827	+851,351	+353,140	2,759,811	18-19	3,016,648	- 126,058	- 851,351	+299,225	2,338,463
20-24	6,396,437	+115,677	+1,537,686	+1,248,199	9,297,999	20-24	4,677,179	+84,585	- 1,537,686	+499,925	3,724,003
25-29	7,841,477	+725,218	+1,289,090	+1,482,378	11,338,163	25-29	2,821,945	+260,987	- 1,289,090	+269,806	2,063,648
30-34	7,851,556	+1,482,023	+1,072,687	+1,501,756	11,908,022	30-34	2,201,635	+415,570	- 1,072,687	+222,893	1,767,411
35-39	8,092,088	+2,022,758	+803,184	+1,133,058	12,051,088	35-39	1,901,180	+475,233	- 803,184	+163,267	1,736,496
40-44	8,356,117	+1,170,818	+737,257	+1,552,389	11,816,581	40-44	2,044,431	+286,455	- 737,257	+241,026	1,834,655
45-49	8,824,721	- 162,649	+841,171	+1,892,165	11,395,409	45-49	2,351,226	- 43,335	- 841,171	+292,035	1,758,754
50-54	8,392,935	- 773,677	+667,209	+2,102,971	10,389,439	50-54	2,567,208	- 236,650	- 667,209	+422,131	2,085,479
55-59	6,852,727	- 69,738	+272,582	+1,890,891	8,946,463	55-59	2,734,973	- 27,833	- 272,582	+652,461	3,087,018
60-64	4,454,833	+694,885	- 164,817	+1,131,179	6,116,081	60-64	3,703,420	+577,677	+164,817	+1,008,871	5,454,784
65-69	1,954,908	+1,211,637	- 386,126	+512,928	3,293,347	65-69	3,940,160	+2,442,081	+386,126	+422,131	8,016,987
70-74	878,363	+893,145	- 301,395	+214,692	1,684,805	70-74	3,394,782	+3,451,909	+301,395	+1,043,893	8,191,979
75+	689,971	+683,868	- 290,743	+475,709	1,558,805	75+	6,613,220	+6,554,716	+290,743	+5,911,222	19,369,901
FEMALES						FEMALES					
00-15	0	+0	+0	+0	0	00-15	31,988,700	+2,941,270	+0	+3,858,191	38,788,161
16-17	709,374	+15,686	+789,583	+178,296	1,692,938	16-17	3,511,482	+77,646	- 789,583	+329,547	3,129,093
18-19	1,690,187	- 76,957	+663,039	+332,514	2,608,783	18-19	2,730,434	- 124,322	- 663,039	+283,842	2,226,915
20-24	6,255,106	+22,551	+857,426	+1,081,805	8,216,887	20-24	4,372,770	+15,764	- 857,426	+535,379	4,066,488
25-29	7,082,380	+393,308	+590,435	+1,154,575	9,220,698	25-29	3,398,449	+188,727	- 590,435	+428,950	3,425,691
30-34	6,726,583	+922,290	+569,987	+1,132,838	9,351,698	30-34	3,288,898	+450,945	- 569,987	+436,914	3,606,770
35-39	6,868,472	+1,258,055	+563,714	+868,396	9,558,637	35-39	3,215,764	+589,012	- 563,714	+323,872	3,564,934
40-44	7,353,131	+729,391	+689,095	+1,149,863	9,921,479	40-44	3,150,480	+312,511	- 689,095	+363,627	3,137,524
45-49	8,166,309	- 352,427	+607,350	+1,294,024	9,715,256	45-49	3,293,432	- 142,132	- 607,350	+390,909	2,934,859
50-54	7,916,267	- 874,943	+276,481	+1,423,268	8,741,074	50-54	3,476,061	- 384,190	- 276,481	+547,576	3,362,965
55-59	6,531,704	- 194,391	- 436,893	+1,154,156	7,054,576	55-59	3,675,104	- 109,375	+436,893	+782,936	4,785,558
60-64	4,179,268	+564,004	- 837,529	+605,311	4,511,053	60-64	4,652,128	+627,817	+837,529	+948,084	7,065,559
65-69	1,654,404	+974,285	- 639,353	+193,667	2,183,004	65-69	4,971,445	+2,927,702	+639,353	+831,245	9,369,744
70-74	690,968	+659,995	- 397,118	+63,825	1,017,670	70-74	4,371,591	+4,175,627	+397,118	+598,497	9,542,833
75+	531,597	+390,941	- 311,350	+254,070	865,258	75+	10,785,440	+7,931,699	+311,350	+7,910,133	26,938,622
TOTAL	139,222,059	+12,367,121	+10,771,137	+26,558,250	188,918,567	TOTAL	170,104,166	+36,777,796	- 10,771,137	+35,238,341	231,349,166
Change as % of 2010 Base		+9%	+8%	+19%	+36%	Change as % of 2010 Base		+22%	- 6%	+21%	+36%

Source: U.S. Bureau of Labor Statistics, Labor Force Statistics from the Current Population Survey, 1948-2012 (online resource at www.bls.gov).

U.S. Census Bureau, Projections of U.S. Population by Age, Sex, Race, and Hispanic Origin: 2012-2060 (released December 2012); Estimated Population of the U.S. by Age and Sex: 2010-2012 (released June 2013); Monthly Postcensal Estimates of the Civilian Noninstitutionalized Population, by Age, Sex, Race, and Hispanic origin.

Notes: Calculations reflect application of employment data from the U.S. Bureau of Labor Statistics to population data from the U.S. Census Bureau.

Employment rates by age and sex, which are based on the civilian non-institutional population, were adjusted to be applicable to the total population and applied to intercensal estimates, postcensal estimates, and projections of total population by age and sex.

1. The impact of demographic change from 2010 to 2030 was computed by subtracting the actual number of workers or dependents in 2010 from the number of workers or dependents projected by applying 2010 employment rates to population figures for 2030.

2. The impact of economic recovery was computed by subtracting the projection described in note 1 above from a projection computed by applying 2000 employment rates to population figures for 2030.

3. The impact of demographic change from 2030 to 2050 was computed by subtracting the projection described in note 2 above from a projection computed by applying 2000 employment rates to population figures for 2060.

4. These projections, which were computed by applying 2000 employment rates to population figures for 2060, are equal to the sum of the preceding four columns.